

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

**Woods Hole Oceanographic Institution  
Environmental Systems Laboratory**

is authorized to discharge from the facility located at

**171 Oyster Pond Road  
Woods Hole, MA 02543**

to receiving water named

**Vineyard Sound** (Cape Cod Watershed - MA96)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective (30) thirty days from the date of issuance.

This permit and the authorization to discharge expires at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on January 29, 1988.

This permit consists of 8 pages in Part I including effluent limitations, monitoring requirements, Attachment A, Marine Acute Toxicity Test Procedure & Protocol, and 35 pages in Part II including General Conditions and Definitions.

Signed this 17<sup>th</sup> day of September, 2001

/Signature on File/

Linda M. Murphy  
Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

Acting Assistant Commissioner  
Bureau of Resource Protection  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

PART I

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001 to the receiving water (Vineyard Sound). Such discharge shall be limited and monitored by the permittee as specified below.

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	MGD	0.79	----	Report	Continuous <sup>1</sup>	Recorder
pH	S.U.	(See Condition I.A.1.b. on Page 3)			1/Week	Grab
Temperature	° Celsius	Report	----	29.4	1/Week <sup>2</sup>	Grab
Whole Effluent Toxicity Testing <sup>3,4</sup>	%	Acute LC <sub>50</sub> ≥ 100%			1/Year	6-Hour Composite <sup>5</sup>

Footnotes:

1. For flow, report maximum and minimum daily rates and total flow for each operating date.
2. The temperature of the effluent shall not exceed 29.4° Celsius at any time. The monthly average shall not exceed 26.7° Celsius, and the rise in temperature due to the discharge shall not exceed 0.8° Celsius.
3. The permittee is required to conduct a Whole Effluent Toxicity (WET) test, following the EPA Region I Protocols. The test species are Silverside and Mysid Shrimp. The test shall be conducted within 45 days of the issuance of this permit and annually during the second week of July. Testing should be conducted during a cleaning/filter backwash event. The test results shall be submitted by the last day of the month following the completion of the test. The test must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit. The permit may be reopened based on WET sampling results to a toxicity reduction evaluation (TRE) or to include specific effluent limitations for toxic parameters.
4. The Whole Effluent Toxicity test limit is LC<sub>50</sub> equal to 100%. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
5. A 6-hour composite sample will consist of at least six (6) grab samples taken during one working day.

Part I.A.1 (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time, and not more than 0.2 standard units outside the normally occurring range. There shall be no change from background conditions that would impair any use assigned to this class.
- d. The discharge shall not cause objectionable discoloration of the receiving waters.
- e. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- f. By January 30 of each year, the permittee shall submit a report to EPA, MA DEP, and Massachusetts Division of Marine Fisheries that identifies and describes research activities performed throughout the prior calendar year on substances undergoing biological and/or chemical testing and describe the potential characteristics of the wastewater generated as a result of the tests. Based on the data provided by the permittee, EPA and MA DEP may require more sensitive testing procedures, upgrade pollutant removal equipment or termination of the tests until proper mitigation procedures or equipment are installed. *Changes are grounds for EPA/MA DEP to reopen or modify the permit.*
- g. Samples taken in compliance with the monitoring requirements specified in the permit shall be taken at the outlet of settling pond prior to mixing with the receiving water or any other waste stream.

2. All existing manufacturing, commercial, mining and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
  - a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) One hundred micrograms per liter (100 ug/l);
    - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
    - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21 (g) (7); or

Any other notification level established by the Director in accordance with 40 CFR §122.44(f).

- b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      - (1) Five hundred micrograms per liter (500 ug/l);
      - (2) One milligram per liter (1 mg/l) for antimony;
      - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21 (g) (7); or
      - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f).
    - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by product any toxic pollutant which was not reported in the permit application.
  3. Woods Hole Oceanographic Institution shall notify the Massachusetts Department of Environmental Protection (MA DEP), the Massachusetts Division of Marine Fisheries (MA DMF), and the US EPA 60 days prior to any changes in the facilities operation as stated on Part II.D.a(2). The permittee shall contact the MA DEP, MA DMF and the US EPA before any toxic organisms, such as red tide algae, any molluscan shellfish, or any other non-native species are to be cultured or tested. The MA DMF should be notified by the permittee prior to any shellfish being used at the facility that have been transported in from another country, state or town and are placed in an undisinfected flow through system at the facility.
  4. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of such a standard, this permit may be revised or amended in accordance with such standards, with the permittee being so notified.

5. This permit shall be modified, or revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301 (b) (2) (C) and (D), 304 (b) (2) of the Act, if the effluent standard or limitation so issued or approved:
  - (1) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
  - (2) controls any pollutant not limited in this permit.
6. Any change of the fish species to be raised or tested at this facility will require written notification to the EPA Director and the State Director and possible permit modification.
7. There shall be no discharge of untreated wastewaters resulting from cleaning accumulated solids in the tanks, raceways, other aquaria, screens and associated equipment.
8. All tanks, raceways and other aquaria in the laboratory shall have drain screens to prevent the release of hatchlings or solids into the receiving waters.
9. The disposal of solid waste materials from the facility shall comply with the appropriate state and local statutes.
10. Medication
  - a. The permittee shall use only medications and disease control chemicals in dosages and combinations as approved by the U.S. Food and Drug Administration (USFDA) and the National Marine Fisheries Service (NMFS)
  - b. The permittee shall use these medications and chemicals as needed to treat a disease or disease causing conditions. The prophylactic use of disease control medications is prohibited.
  - c. The permittee shall notify (in Accordance with Paragraph II.D.1) within five (5) working days in writing the Regional Administrator, the U.S. National Marine Fisheries, the EPA Director and the State Director of the emergency use or the immediate intended use of any medication and/or chemical not specifically identified in the Best Management Practices Plan as described below. The permittee approved shall provide the information on each chemical or medication required in Par. I.11.f. (5)

**B. BEST MANAGEMENT PRACTICES (BMP) PLAN**

- a. A plan shall be developed which establishes Best Management Practices (BMP) to be followed in operating the facility, cleaning the tanks, raceways other aquaria and screens and other equipment and disposing of any solid waste. The purpose of this plan is to identify and describe the practices which minimize the amounts of pollutants discharged to surface waters.
- b. The BMP plan shall be completed, signed and submitted to EPA, MA DEP, and the MA DMF within 120 days after the effective date of this permit; the plan should be modified as necessary during the life of the permit.
- c. The BMP Plan will be considered acceptable if EPA and the State have not responded within after forty five (45) days of its receipt. The BMP Plan shall be submitted directly to the Director, Office

of Ecosystem Protection at EPA, to the Director, Office of Watershed Management at the MA DEP and to the Laboratory Supervisor, MA DMF.

d. Upon acceptance, the BMP Plan becomes an enforceable element of this permit and shall be implemented by the permittee.

e. The permittee shall amend the BMP Plan whenever there is a change in facility design, construction, operation or maintenance which affects the potential for the discharge of pollutants into surface waters. Amendments to the BMP Plan shall be submitted directly to the Director, Office of Ecosystem Protection at EPA, to the Director, Office of Watershed Management at the Massachusetts DEP and to the Laboratory Supervisor at MA DMF. Amendments shall be considered acceptable if EPA and the State have not responded after forty-five (45) days of its receipt.

f. The BMP Plan shall include, as a minimum, the following items:

(1) During operations:

A description of the facility use assignment process, including a step for assuring that the cognizant official is notified of any changes in facility operation so that proposed laboratory activities are consistent with this permit.

A description of the pollution control equipment or methods used to enhance solids collection.

A description of how excessive solids buildup will be identified to trigger more frequent cleaning of the tanks, raceways, other aquaria and equipment thereby preventing more suspended and dissolved materials in the discharge.

A description of the methods used in feeding to minimize the amount of feed and chemicals introduced into the discharge.

A description of the preventative maintenance program for cleaning equipment so that delays in cleaning due to equipment failures are avoided.

(2) Biological Pollution

Describe in detail the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous to the New England area and/or the United States from becoming established in the local surface waters.

A description for storage and treatment of Outfall 001 discharge during plant upsets to prevent biological pollution from untreated discharge bypass from entering Vineyard Sound or any water of the Commonwealth of Massachusetts.

(3) Cleaning of rearing tanks and other equipment:

Describe in detail how the accumulated solids are to be removed/dewatered and methods of disposal.

Describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters.

(4) Personnel Training

Describe the training to be provided for employees and researchers to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES permit and their individual responsibilities for complying with the goals and objectives of the BMP plans and the NPDES permit.

(5) Medications and chemicals used in the facility

List in the BMP plan all medications and chemicals that are expected to be used in the facility. For each medication or chemical identify:

Product name of the medication or chemical  
The chemical formulation of the medication or chemical  
The purpose or use of the chemical  
The dosage rate, frequency of application (hourly, daily, etc.) And the duration (number of days) of treatment.  
The method of application  
The method or methods used to detoxify the wastewater prior to discharge.  
Information of the persistence and toxicity of each medication or chemical  
Information on the Food and Drug Administration (USFDA) approval for use of the medication or chemical for human consumption.  
Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); no effect level and LC50 for typical salt water aquatic organisms.

**C. MONITORING AND REPORTING**

1. Reporting

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection  
Surface Water Discharge Permit Program  
Central Regional Office  
627 Main Street  
Worcester, MA 01608

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Cape Cod/Islands Team  
20 Riverside Drive  
Lakeville, MA 02347

Copies of the Annual Research Report, notification of changes in facility operation and the Best Management Practices Plan shall also be submitted to:

Commonwealth of Massachusetts  
Division of Marine Fisheries - Laboratory Supervisor  
30 Emerson Avenue  
Gloucester, MA 01930

#### **D. STATE PERMIT CONDITIONS**

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap.21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.